

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Canceled)
2. (Currently Amended) The method recited in claim 7 [1], further comprising providing a link between the data of the fields of the object that are stored within the database store and the data of the field that is stored as a file outside of the database store.
3. (Currently Amended) The method recited in claim 7 [1], wherein the data of the fields of the object that are stored within the database store are stored as fragments within a column of a table of the database, the column having been designated as the user defined type.
4. (Original) The method recited in claim 3, wherein a unique identifier associated with the object is stored in another column of the table in a same row as the data of the fields of the object.
5. (Currently Amended) ~~The method recited in claim 1, further comprising:~~
In a computer system in which an object that is an instance of a user defined type can be persisted in a database store, wherein a definition of the user defined type comprises a plurality of fields, each of said plurality of fields being assigned any one of a plurality of data types supported by the database store, at least one of said plurality of fields of the definition being designated as containing data that is to be stored as a file outside of the database store separately from the data of the other of said plurality of fields of the type definition while maintaining the assigned data type of said at least one designated field, a method comprising:
creating a unique dedicated directory within a file system of the computer system for storing files containing the data of said at least one designated field of ~~every instance~~ instances of the user defined type; ~~and~~
receiving requests to store objects that are different instances of the user defined type, and for each such request to store an object that is an instance of the user defined type:

determining from the designation of said at least one field of the instance of the user defined type that the data of that field is to be stored as a file outside of the database store;

storing the data of said at least one designated field of ~~every~~ the instance of the user defined type as a respective file within the created directory; and

storing the data in each of the other fields of said plurality of fields of the instance of the user defined type within the database store.

6. (Canceled)

7. (Currently Amended) ~~The method recited in claim 6, wherein said step of providing access by an application to the file in which the data of said at least one field is stored comprises:~~

In a computer system in which an object that is an instance of a user defined type can be persisted in a database store, wherein a definition of the user defined type comprises a plurality of fields, each of said plurality of fields being assigned any one of a plurality of data types supported by the database store, at least one of said plurality of fields of the definition being designated as containing data that is to be stored as a file outside of the database store separately from the data of the other of said plurality of fields of the type definition while maintaining the assigned data type of said at least one designated field, a method comprising:
receiving a request to store an object that is an instance of the user defined type;
determining from the designation of said at least one field that the data of that field is to be stored as a file outside of the database store;

storing the data in said at least one designated field of said plurality of fields of the instance of the user defined type as a file outside of the database store;

storing the data in each of the other fields of said plurality of fields of the instance of the user defined type within the database store;

receiving a call from ~~the~~ an application, via an application programming interface to ~~the~~ a file system of the computer system, to open the file in which the data of said at least one field is stored outside the database store, wherein the call identifies the field of the object by its identity within the database store;

determining from the identity of the field of the object within the database store a path within the file system of the computer system to the file containing the data of that field of the object; and

executing the call to open the file using the determined path.

8. (Currently Amended) The method recited in claim 7 wherein the file system of the computer system comprises a Microsoft NTFS file system and wherein the application programming interface to the file system comprises the Win32 application programming interface.

9. (Currently Amended) The method recited in claim 7 [1], wherein the type of the object is defined as a class in managed code.

Claims 10 – 24 (CANCELED).

25. (Canceled)

26. (Currently Amended) The computer readable storage medium recited in claim 31 [25], wherein the program code further causes the computer system to provide a link between the data of the fields of the object that are stored within the database store and the data of the field that is stored as a file outside of the database store.

27. (Currently Amended) The computer readable storage medium recited in claim 31 [25], wherein the program code further causes the data of the fields of the object that are stored within the database store to be stored as fragments within a column of a table of the database, the column having been designated as the user defined type.

28. (Currently Amended) The computer readable storage medium recited in claim 27, wherein the program code further causes the computer system to store a unique identifier associated with the object in another column of the table in a same row as the data of the fields of the object.

29. (Currently Amended) ~~The computer readable medium recited in claim 25, wherein the program code causes the computer to~~ A computer readable storage medium having program code stored thereon for use in a computer system in which an object that is an instance of a user defined type can be persisted in a database store, wherein a definition of the user defined type comprises a plurality of fields, each of said plurality of fields being assigned any one of a plurality of data types supported by the database store, at least one of said plurality of fields of the definition being designated as containing data that is to be stored as a file outside of the database store separately from the data of the other of said plurality of fields of the type definition while maintaining the assigned data type of said at least one designated field, said program code, when executed on a computer system, causing the computer system to:

create a unique dedicated directory within a file system of the computer system for storing files containing the data of said at least one designated field of every instance instances of the user defined type and;

receive requests to store objects that are different instances of the user defined type, and for each such request to store an object that is an instance of the user defined type:

determine from the designation of said at least one field that the data of that field is to be stored as a file outside of the database store;

store the data of said at least one designated field of every the instance of the user defined type as a respective file within the created directory; and

store the data in each of the other fields of said plurality of fields of the instance of the user defined type within the database store.

30. (Canceled)

31. (Currently Amended) ~~The computer readable medium recited in claim 30, wherein the program code causes the computer to provide access by an application to the file in which the data of said at least one field is stored by:~~ A computer readable storage medium having program code stored thereon for use in a computer system in which an object that is an instance of a user defined type can be persisted in a database store, wherein a definition of

the user defined type comprises a plurality of fields, each of said plurality of fields being assigned any one of a plurality of data types supported by the database store, at least one of said plurality of fields of the definition being designated as containing data that is to be stored as a file outside of the database store separately from the data of the other of said plurality of fields of the type definition while maintaining the assigned data type of said at least one designated field, said program code, when executed on a computer system, causing the computer system to:

receive a request to store an object that is an instance of the user defined type;

determine from the designation of said at least one field that the data of that field is to be stored as a file outside of the database store;

store the data in said at least one designated field of said plurality of fields of the instance of the user defined type as a file outside of the database store;

store the data in each of the other fields of said plurality of fields of the instance of the user defined type within the database store;

receive receiving a call from the an application, via an application programming interface to the a file system of the computer system, to open the file in which the data of said at least one field is stored outside the database store, wherein the call identifies the field of the object by its identity within the database store;

determining from the identity of the field of the object within the database store a path within the file system of the computer to the file containing the data of that field of the object;
and

executing the call to open the file using the determined path.

32. (Currently Amended) The computer readable storage medium recited in claim 31 wherein the file system of the computer system comprises a Microsoft NTFS file system and wherein the application programming interface to the file system comprises the Win32 application programming interface.

33. (Currently Amended) The computer readable storage medium recited in claim 31 [25], wherein the type of the object is defined as a class in managed code.

34. (Canceled)

35. (Currently Amended) The method recited in claim 7 [1], further comprising:
performing a database operation on the data of said at least one designated field of the instance of the user-defined type, wherein the database operation is performed on the data of said at least one designated field as if it were stored within the database store.

36. (Previously Presented) The method recited in claim 35, wherein the database operation may comprise one of an INSERT, UPDATE or DELETE operation.

37. (Canceled)

38. (Currently Amended) The computer readable storage medium recited in claim 31 [25], wherein the program code further causes the computer system to:
perform a database operation on the data of said at least one designated field of the instance of the user-defined type, wherein the database operation is performed on the data of said at least one designated field as if it were stored within the database store.

39. (Currently Amended) The computer readable storage medium recited in claim 38, wherein the database operation may comprise one of an INSERT, UPDATE or DELETE operation.

40. (New) The method recited in claim 5, wherein a location of the created directory within the file system of the computer system is based at least in part upon a logical structure of the database store.

41. (New) The method recited in claim 40, wherein the logical structure of the database store comprises one or more tables, and wherein the location of said created directory within the file system is associated with one of said one or more tables.

42. (New) The method recited in claim 40, wherein the logical structure of the database store comprises one or more tables, each comprising one or more columns, and wherein the location of said created directory within the file system is associated with one of said columns.

43. (New) The computer-readable storage medium recited in claim 29, wherein a location of the created directory within the file system of the computer system is based at least in part upon a logical structure of the database store.

44. (New) The computer-readable storage medium recited in claim 43, wherein the logical structure of the database store comprises one or more tables, and wherein the location of said created directory within the file system is associated with one of said one or more tables.

45. (New) The computer-readable storage medium recited in claim 43, wherein the logical structure of the database store comprises one or more tables, each comprising one or more columns, and wherein the location of said created directory within the file system is associated with one of said columns.